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Federal Communication Commission
Online Comment Filing

RE: FCC ET Docket 03-104 / Broadband over Power Line NOI

Dear FCC Commissioners,

While Broadband over Power Lines, also known as PLC, offers another alternative to consumers for broadband Internet access, there are potential severe implications for allowing this technology to be deployed. Licensed services utilizing frequencies in the 1 to 30 Mhz portion of the spectrum will suffer from severe interference. One of these services is Amateur Radio. Amateur Radio serves as an educational tool, a hobbyist service, and a public service. Many people in technology fields have gotten their start in Amateur Radio, learning about the basics of radio frequency design and were able to learn through experimentation. Amateur Radio provides emergency communications in times of disaster and is a fail-safe communication method when all other systems fail.

Amateur Radio operators are experimenters; many of which use low power transmissions with self designed and built equipment. Receiving such low power signals requires low noise floors. PLC operations will significantly increase the noise floor and has been shown in other countries to make Amateur Radio HF operations difficult or nearly impossible.

Part 15 is intended to accommodate unlicensed devices while protecting licensed services. Regulations for emissions are included, but the one basic tenant of Part 15 is that the device must not interfere with licensed devices, and must accept any interference from any other device, licensed or otherwise. It is my position that although it may be true as PLC equipment vendors have stated that PLC devices can be deployed under the current rules, a compliant deployment will interfere with licensed services requiring carriers to significantly reduce or deactivate service in areas making PLC a difficult proposition. Regardless if a technology can be deployed within the emission limits set by Part 15, that does not mean it is automatically a viable technology.

Paragraph 4 of the NOI states, "...AM radio systems on some school campuses employ carrier current technology". While this is merely an introductory background statement, it should be noted that carrier current in this application is incidental radiation on *one frequency*, rather than a *band of frequencies* such as proposed PLC systems. It is within the best interests of a common carrier broadcaster to avoid frequencies in use by licensed broadcasters as this would increase the effective coverage area of the common carrier operation. PLC operators have no motivation other than regulatory reasons to avoid licensed services, nor will the proposed complex modulation schemes such as OFDM facilitate such licensed service avoidance.

Paragraph 7 of the Notice notes: "The power line is a noisy communications medium, characterized by several unpredictable and strong forms of interference...However, the availability of faster chip sets and the development of sophisticated modulation schemes have produced new designs that can overcome these earlier technical obstacles...." Interference in the past was typically a two way street – interference would affect both parties involved. This will not be the case as PLC complex modulation schemes would likely be immune to interference from licensed services. While licensed services would hopefully continue to have recourse under existing or future Part 15 rules, this is little other motivation for the PLC carrier to mitigate interference.

Power lines were never designed to carry high frequency energy. On the contrary they are constructed with the delivery of 60 Hz power in mind and are effective radiators of the radio frequency energy in use in broadband PLC systems. Cable systems have been subject to standards for egress emissions for years, and rightfully so. Numerous cable television channels fall on aviation and public safety frequencies and interference from cable systems can threaten public safety. PLC systems should be subject to the same requirements and treated as a typical Part 15 device is today. Licensed services should by all means be provided protection.

If Part 15 regulations are modified to facilitate the development and deployment of PLC, the limits of operation must be designed not only to protect other licensed services, but also the PLC operators themselves. If emissions standards are too relaxed, manufacturers will be allowed to sell products which will undoubtedly interfere with licensed operations, and the burden of mitigating interference and associated costs will fall upon the PLC operator, or worse, the end user. The NOI and the statements of the Commissioners indicate a spirit of decreased regulation. The statement of Commissioner Martin notes that BPL technology can be deployed under existing rules. Relaxing any Part 15 rules will doom BPL technology as the potential for interfering with licensed services increases. As interference complaints are filed, BPL systems will have to reduce or shutdown operations to avoid interference, giving BPL a reputation of an unemployable, unavailable, and useless technology.

It is noted in the NOI that PLC would increase homeland security. This may be true, but it would be at the expense of Amateur Radio HF emergency communications and other government services that occupy this band. Also considering that power line infrastructure is typically tied very closely to telco and cable facilities, in a terrorist-induced or natural disaster it is likely that PLC would be disabled simultaneously with other copper and fiber based services.

In summary, I would urge the FCC and the Commissioners to slow down the desire to "fast track" this technology, and consider the implications to licensed services, PLC carriers, and the general public. Relaxation of existing rules in an attempt to facilitate development of BPL will do more harm than good not only to licensed services, but to BPL technology itself. Also consider that while utility power infrastructure is ubiquitous, other alternate technologies which are inherently designed to carry broadband information exist. Cable probably offers the best opportunity to cover underserved areas. DSL, while hampered by central office and telco plant limitations, still has sizable subscriber numbers and could be encouraged to extend to rural underserved areas using regulatory means available to the Commission. Wireless using existing Part 15 allocations in the ISM and UNII bands

is providing service in rural areas and could benefit from quasi-licensed/frequency coordinated primary spectrum. Licensed MMDS/ITFS spectrum continues to be underutilized and difficult for new wireless broadband Internet carriers to obtain licenses to start operations. Furthermore, BPL is not needed to enable the exciting features seen by the Commissioners during various recent BPL demonstrations – the technology to do this already exists.

I hope the FCC will not lose focus of the technical issues of BPL while pursuing potential broadband applications.

Thank You

Anthony Good